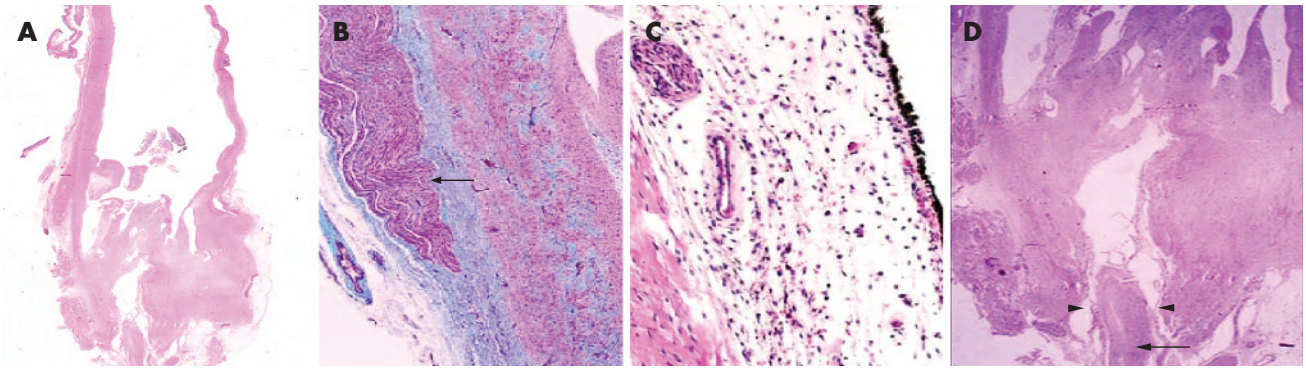

Figure 2 (A) Histopathology shows a cystic cavity which has been ruptured anteriorly (low power). (B) Higher power view with trichrome stain shows the cyst wall to be primarily fibroglial tissues with an area of primitive muscle (arrow) inserting into the cyst wall. (C) Areas of choroidal and retinal pigment epithelium tissue differentiation were identified (shown), and primitive tissue resembling retina was also seen (not shown). (D) Primitive optic nerve (arrow) with surrounding channels (arrowheads) was identified. No lens, ciliary body, iris, or cornea tissues were identified.

neural markers GFAP, NSE, and NF confirmed the glial proliferation with neural elements.

Comment

The etiology of congenital cystic eyeball is unknown, and no risk factors have been identified. There is no identifiable globe in this condition, unlike microphthalmos with cyst. Histologically, congenital cystic eye shows a cavity lined by neuroglial tissue. Nonocular abnormalities have been reported in association with congenital cystic eye, including intracranial anomalies as part of an ''ectodermopathy'', but these patients had a normal karotype.[2]

Turner's syndrome results from X chromosome monosomy (45XO), mosaicism, or an abnormality in one X chromosome. Numerous ocular abnormalities have been associated with Turner's syndrome including strabismus, ptosis, hypertelorism, epicanthus, cataracts, glaucoma, anterior segment dysgenesis, retinal neovascularisation, keratoconus, and uveitis.[3] One patient with Turner's syndrome has been reported to have ectopic orbital brain tissue, which bears similarity to our case, but that patient had a normal globe.[4]

Prenatal ultrasound has detected ocular abnormalities in utero including microphthalmos, anophthalmos, cataracts, retinoblastoma, and an epithelial orbital cyst.[5] In our case, prenatal imaging detected the cystic eye.

To our knowledge, congenital cystic eyeball has not been previously reported in a patient with 45XO. Cystic eye should be added to the list of ocular anomalies found in association with Turner's syndrome.

Marsha C Kavanagh, Diamond Tam, Jennifer J Diehn, Anthony Agadzi, Edward L Howes, Douglas R Fredrick
Department of Ophthalmology, University of California at San Francisco, San Francisco, California, USA

Correspondence to: Marsha C Kavanagh, M.D., Department of Ophthalmology, University of California, San Francisco, 10 Koret Way, K302, San Francisco, CA 94143-0730, USA; mcheung26@yahoo.com

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Adjunctive hyperbaric oxygen in pseudomonas keratitis

Hyperbaric oxygen (HBO) has been reported as an adjunctive treatment for various corneal conditions.[1 2] We report a case of contact-lens associated *Pseudomonas* keratitis which we treated adjunctively with hyperbaric oxygen.

Case report

A 30-year-old female presented with pain and progressive blurring in the left eye. She was wearing daily disposable contact lenses when she was splashed with muddy water in the face whilst mountain-biking.

Left visual acuity on presentation was 6/12. A 4 mm × 4 mm superior corneal ulcer with underlying infiltrate was noted. Corneal scrapings were obtained before commencing hourly topical gentamicin 0.9% and cephalothin 5%. A heavy growth of *Pseudomonas aeruginosa* sensitive to ceftazidime, gentamicin, ciprofloxacin, imipenem, piperacillin, ticarcillin and tobramycin was cultured.

On the second day of admission, visual acuity deteriorated to count fingers with increased corneal infiltrate and oedema. Topical ciprofloxacin and tobramycin in addition to oral moxifloxacin and intravenous ticarcillin were added while topical gentamicin was ceased.

On the third day, there was no improvement so we commenced daily adjuvant hyperbaric treatment. This consisted of 90 minutes at 2.0 atmospheres absolute pressure (2 ATA) breathing 100% oxygen in a monoplace chamber (Vickers Medical, Sidcup, UK). Twenty-four hours later, visual acuity improved from count fingers to 6/24. Cephalothin and intravenous ticarcillin were ceased over the next two days. On the sixth day, visual acuity improved to 6/9 and hyperbaric therapy was ceased.

Topical antibiotics were continued for a total of 6 weeks at which point her visual acuity recovered to 6/6. There was mild scarring and thinning superiorly but she reported her vision was essentially normal.

Comment

Pseudomonas keratitis is a well documented complication of soft contact lens wear[3] and is associated with poor outcomes including loss of the eye.[4] In view of its virulence and the rapid clinical progression we decided to use HBO.

Well established as adjuvant treatment in certain bacterial infections[5] HBO restores normoxia to hypoxic tissues or establishes hyperoxia in normoxic tissues. In vitro and in vivo animal experiments show HBO to be efficacious against *Pseudomonas aeruginosa*.[6 7] Pharmacologically, HBO also prolongs the post-antibiotic effect of tobramycin against *Pseudomonas aeruginosa*.[8]

HBO is known to be effective in treating *Pseudomonas aeruginosa* in malignant otitis externa in humans.[9] However, we are aware of only two reports describing the use of HBO in human corneal pathology. One is from the French literature in 1970 but further details are not available to us.[1] The other was a report of 32 patients with corneal disorders including ''keratitis, traumatic injuries & ulcerations'' treated with hyperbaric oxygen. The rationale was that ''tissue oedema, hypoxia and ischaemia in these conditions are improved by hyperoxygenation'' and it was found to be ''beneficial in most of these cases''.[2]

The optimal dose of oxygen is unknown. In vitro studies suggest at least 1.6 ATA oxygen[6] is required for efficacy against *Pseudomonas aeruginosa* and in vivo studies showed efficacy at 2.0 ATA.[7] Higher oxygen concentrations may be used but this is limited to 3.0 ATA by systemic toxicity.[10] Intermittent therapy also limits oxygen toxicity[10] and improves bacterial clearance in vitro and in vivo compared with continuous exposure.[6] The treatment protocol in our case was that used locally for osteomyelitis. Given that the cornea gains most of its oxygen supply via direct diffusion from the atmosphere, we used a monoplace or hood system that delivers oxygen both systemically and directly to the cornea.

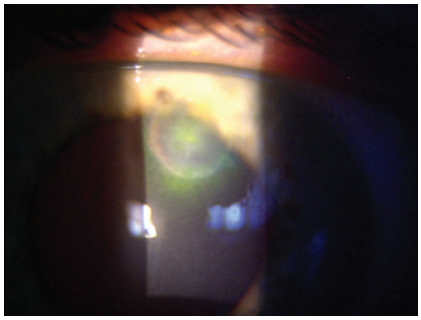

Figure 1 Left cornea two weeks after infection.

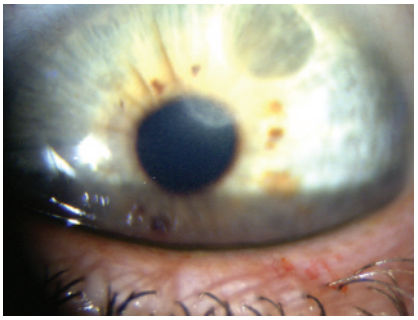

Figure 2 Left cornea six weeks after infection.

Hyperbaric oxygen treatment is safe, has few contraindications and may have accelerated recovery in this case. Further studies are needed to establish the clinical efficacy of adjunctive hyperbaric oxygen in bacterial keratitis.

Robert Chong, Chandra J Ayer, Ian C Francis, Minas T Coroneo
Department of Ophthalmology, Prince of Wales Hospital, Randwick, Sydney, Australia

Darren L Wolfers
Department of Hyperbaric Medicine, Prince of Wales Hospital, Randwick, Sydney, Australia

Correspondence to: Prof Minas T. Coroneo, Department of Ophthalmology Prince of Wales Hospital High St Randwick, 2031, Australia; m.coroneo@unsw.edu.au

Informed consent was obtained for publication of the person's details in this report.

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NOTICES

Glaucoma

The latest issue of *Community Eye Health* (No 59) discussing new treatments for glaucoma in the developing world, with an editorial by leading specialist Richard Wormald. For further information please contact: Journal of Community Eye Health, International Resource Centre, International Centre for Eye Health, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK (tel: +44 (0)20 7612 7964; email: Anita.Shah@lshtm.ac.uk; online edition: www.jceh.co.uk). Annual subscription (4 issues) UK £28/US$45. Free to developing country applicants.

8th EUNOS Meeting – 2007

The 2007 European Neuro-ophthalmology Society meeting (EUNOS; www.eunos.web.org) will be taking place in Istanbul, Turkey on 26-29th May 2007. For further information please visit www.eunos2007.org or contact Pinar Aydin aydinp@eunos2007.org

9th IOIS International Symposium

The 9th International Ocular Inflammation Society International symposium will be held in Paris from 17–20th September 2007. For further information on registration please call +33 (0)1 70 08 69 82, or fax +33 (0)1 42 93 29 28, or email andrelamy1@wanadoo.fr. Or you can visit the website www.iois-paris-2007.com.

IAPB 8th General Assembly – 2008

The 2008 International Agency for the Prevention of Blindness Eighth General Assembly: 'Excellence and Equity in Eye Care' will be taking place at the Centro de Convenções Rebouças, in Sao Paulo, Brazil on 28th July-2nd August. For further information please email: agency@lvpei.org.

Teaching courses on Retinal and Vitreous Surgery

Several teaching courses on Retinal and Vitreous Surgery have been organised throughout 2006 and 2007 around the world in association with the International Faculty. For further information on each of these courses please contact Ingrid Kressig, Univ.-Augenklinik Theodor-Kutzer-Ufer 1-3, 68164 Mannheim, Germany; email: Ingrid.kreissig@augen.ma.uni-heidelberg.de; website: http://kressig.uni-hd.de/.

Second Sight

Second Sight would like to hear from Indian eye surgeons returning from the UK to India, particularly these interested in working in the state of Orissa. Second Sight is a London-based charity dedicated to the elimination of cataract blindness in India. For further information please contact Dr Lucy Mathen, email: lucymathen@yahoo.com.

A practical clinical approach to the diagnosis and management of intraocular inflammation and infection with lots of patients

The above course will be held at Moorfields Eye Hosptial, London on 8–9th June 2007. The program will cover international faculty, lectures on key topics, patient examination with the faculty helping you, workshops with patients and interactive cases covering other key areas. For further information please email s.mayhew@ucl.ac.uk.